# Technical Specification of Safety Belt Class-P type (Fall protection kit)

## 1.0 Scope:

This belt should be suitable for use by electricians and servicemen engaged in the erection installation and maintenance of electric lines and poles. This belt shall consist of an integrated full body class 'P' (Work positioning) harness with fall arrestor, energy absorbing lanyard set with two scaffolding hooks and adjustable free size shoulder and chest strap. The harness shall have D-rings mounted at waist level with adjustable work positioning lanyard of length 2 mtrs (end to end) made up of 12mm polyamide rope with carabiner at one end and carabiner with push type gripper at another end. The safety belt needs to comply with EN 355, EN 358, EN 361, EN 362, IS 3521-2021 EN/IEC or latest version and with latest amendments.

## 2.0 Materials:

### 2.1 Webbing:

All belts and harnesses shall be made from nylon or other synthetic materials such as polyester. The material shall have a uniform thickness and uniform width. The waist belt, pole straps of safety belts and harness shall be made from nylon/ polyester/ polyamide webbing. The test specimen width shall not be less than 44 mm. The safety harness should comply with IS 3521 (Part-1): 2021 or latest version/EN/IEC and with latest amendments.

### 2.2 Threads for sewing:

Threading (nylon/polyester) for sewing load bearing components shall have similar physical and chemical properties to the materials being sewn. Number of stitches shall not be less than 3 per cm as per IS 3521 (Part-1): 2021.

### 2.3 Energy Absorbing Fork Lanyard:

Forked lanyard of length 1.8mtr (end-to-end) made up of 12mm Polyamide rope with energy absorber and two (2) forged scaffold hooks to be used and should have a Compact design and lightweight.

**2.4 Metal Components:**

The metal components shall be solid or forged in such manner that the joints are not visible and the joined part of the metal does not impair the strength or quality. The surface shall be smooth finished and free from any manufacturing defect, burrs or uneven surface. It is necessary that all the fittings should be chromium plated (or plated with any other protective coating) and the coating of the chromium should be of ample thickness to provide use/storage of the safety belt for a minimum period of 3 years. Care should also be taken that the part of metal fittings mating with the webbing shall be smoothly finished, rounded and designed to prevent damaged to the web etc.

**2.5** Hooks, clamps or other fastening and holding devices shall be of similar quality and properly treated or plated. The designs of the hooks shall be self-closing type and care shall be taken to ensure that if pressure is exerted accidentally on the tongue or latch, they shall not disengage.

**2.6** If any springs are used, then they shall be so arranged and loaded that when the hooks are closed, the springs shall rest in position and shall be free from any movement until pressure is applied to release or to engage.

**3.0 Requirements:**

**3.1 Strength:**

Hooks and main load bearing metal parts and fittings shall not break under the test load of 2,345 KG (23 KN). The load shall be applied as closely as practicable in a manner in which the component is stressed in service. Copper, Aluminum magnesium or titanium and equivalent metals as alloys thereof shall not be used. All the materials used in the production of safety belts including webbing and rope shall pass EN 358, EN 361 and flammability resistance tests as per annexure A of IS 3521-2021.

**4.0 Attachment Manufacture**

The attachment of metal parts and load bearing components and the making of splices and joints shall be such that finished assembly shall pass the performance test as given in IS 3521 (Part-1):2021.

**5.0 Packing and Marketing**

**5.1 Packing:**

The safety belts and fall arrestor shall be suitably packed in one kit pouch / carry bag only.

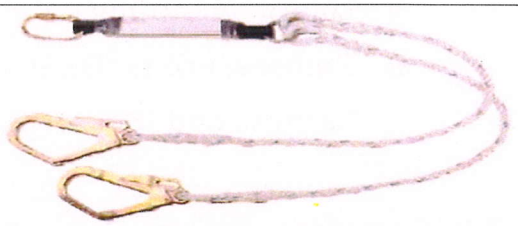
**6.0 Marking on Belts and Harnesses:**

Safety belts and harnesses shall be clearly and indelibly marked or permanently labelled by any suitable method not having a harmful effect with the following information:

a) Name of the manufacturer or trade mark.
b) Year of manufacturer.
c) Words on lettering "MAXIMUM SAFE DROP ----------"
d) Lot/Batch number
e) Emboss/Print: "BESCOM" name shall be embossed/printed on full body harness and the energy absorber.

**7.0 Complete Safety Belt should consist of the following along with the pouch/carry bag**:

- Safety harness belt with broad cushioned pad at the waist.
- Shock-absorbing should be bind with cloth or polymeric casing for fall arrest protection (Polyamide Rope).
- The weight of complete kit should not be more than 5 kg, ± 5% tolerance.
- The safety harnesses shall be designed with a universal size, incorporating adjustable features at both the shoulder and vest levels to accommodate a wide range of body sizes.

| Sample image of Safety Belt with Accessories Class-P type (Fall protection kit) | | |
|---|---|---|
| 1 | Full body harness with the following<br>- Adjustable free size shoulder and Chest strap with D ring<br>- Height adjustment buckles at the chest level<br>- work positioning D Rings | |
| 2 | Work positioning lanyard of length 2.0 m (Polyamide Rope) | |
| 3 | Forked lanyard of length 1.8m (end-to-end) |  |

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